

Smp#	Event#	Stn#	Org Name Kit#	Date	Time	Rep	AL Dis
Howardsville							
467201402070945	467.001		467 DOW	0 2/7/2014	9:45:00	1	15
467201403050930	467.002		467 DOW	0 3/5/2014	9:30:00	1	21
467201403211630	467.003		467 DOW	0 3/21/2014	16:30:00	1	23
467201403220930	467.004		467 DOW	0 3/22/2014	9:30:00	1	0
467201403251645	467.005		467 DOW	0 3/25/2014	16:45:00	1	23
467201404041800	467.007		467 DOW	0 4/4/2014	18:00:00	1	23
467201404050900	467.008		467 DOW	0 4/5/2014	9:00:00	1	20
467201404091800	467.009		467 DOW	0 4/9/2014	18:00:00	1	33
467201404100715	467.01		467 DOW	0 4/10/2014	7:15:00	1	17
467201404100900	467.011		467 DOW	0 4/10/2014	9:00:00	1	27
467201404171830	467.012		467 DOW	0 4/17/2014	18:30:00	1	33
467201404180700	467.013		467 DOW	0 4/18/2014	7:00:00	1	27
467201404251815	467.014		467 DOW	0 4/25/2014	18:15:00	1	51
467201404260630	467.015		467 DOW	0 4/26/2014	6:30:00	1	55
467201405010945	467.016		467 DOW	0 5/1/2014	9:45:00	1	32
467201407011310	467.018		467 DOW	0 7/1/2014	13:10:00	1	57

A68

103201402071030	103.3		103 DOW	0 2/7/2014	10:30:00	1	48
103201403051015	103.301		103 DOW	0 3/5/2014	10:15:00	1	49
103201403211715	103.302		103 DOW	0 3/21/2014	17:15:00	1	80
103201403221015	103.303		103 DOW	0 3/22/2014	10:15:00	1	60
103201403251745	103.304		103 DOW	0 3/25/2014	17:45:00	1	93
103201403260900	103.305		103 DOW	0 3/26/2014	9:00:00	1	81
103201404041845	103.306		103 DOW	0 4/4/2014	18:45:00	1	103
103201404051000	103.307		103 DOW	0 4/5/2014	10:00:00	1	86
103201404091845	103.308		103 DOW	0 4/9/2014	18:45:00	1	93
103201404100800	103.309		103 DOW	0 4/10/2014	8:00:00	1	100
103201404100930	103.31		103 DOW	0 4/10/2014	9:30:00	1	65
103201404171915	103.311		103 DOW	0 4/17/2014	19:15:00	1	111
103201404180745	103.312		103 DOW	0 4/18/2014	7:45:00	1	79
103201404251845	103.313		103 DOW	0 4/25/2014	18:45:00	1	110
103201404260715	103.314		103 DOW	0 4/26/2014	7:15:00	1	115
103201405011015	103.315		103 DOW	0 5/1/2014	10:15:00	1	58
103201407011245	103.317		103 DOW	0 7/1/2014	12:45:00	1	79

AL Tot	AS Dis	AS Tot	CA Dis	CA Tot	CD Dis	CD Tot	CU Dis	CU Tot	FE Dis
19	0	0	56447	56568	0.51	0.59	0	0	119
21	0	0	51896	52745	0.51	0.55	0	0	85
27	0	0	52561	55617	0.38	0.5	0	0	77
28	0	0	50329	57328	0.47	0.45	0	0	98
32	0	0	49928	51245	0.41	0.46	0	0	69
34	0	0	49409	50183	0.44	0.45	0	0	83
29	0	0	52254	52719	0.36	0.45	0	0	74
189	0	0	44771	44996	0.49	0.56	0	3.2	125
57	0	0	44536	44960	0.47	0.43	0	0	60
54	0	0	42813	43523	0.41	0.43	0	0	35
91	0	0	41110	41820	0.63	0.67	0	3.3	103
74	0	0	39071	42937	0.59	0.52	2	3.2	50
245	0	0	30844	31056	1.15	1.29	12.6	27.4	32
290	0	0	27730	31176	1.15	1.34	15.8	26.1	68
70	0	0	39382	40110	0.78	0.87	9.1	9.3	28
236	0	0	22344	22404	0.86	0.92	3	5.3	16
194	0	0	59973	65723	1.82	1.8	2.3	8.2	69
304	0	0	60348	60951	2.11	2.26	2.6	12.6	27
627	0	0	61570	61889	4.03	4.22	3.4	22.7	20
552	0	0	61816	61633	3.97	4.11	3.8	22.9	38
745	0	0	59935	60165	4.84	4.97	5	29.3	22
609	0	0	62051	62472	4.27	4.37	6.1	26.6	64
607	0	0	60310	60818	4.46	4.58	5.2	26.4	45
639	0	0	60474	61273	4.51	4.5	6.6	29.4	89
1122	0	0	52954	53222	3.91	4.17	7.6	45.4	111
545	0	0	50255	53655	3.64	3.71	7.2	23.7	123
384	0	0	52158	55106	3.44	3.58	17.4	58.3	90
601	0	0	45948	49135	3.25	3.31	7.7	24.7	32
410	0	0	44026	45625	2.57	2.7	7.1	19.6	53
335	0	0	29999	31106	1.65	1.77	11.9	24.2	46
379	0	0	29426	29415	1.64	1.77	12.4	24.1	71
287	0	0	39298	40383	2.12	2.33	5.3	18.2	21
204	0	0	22005	22617	0.9	0.91	3.2	5.3	38

FE Tot	PB Dis	PB Tot	MG Dis	MG Tot	MN Dis	MN Tot	SE Dis	SE Tot	ZN Dis
157	0	0	3450	3459	252.7	255.5	0	0	242.5
194	0	0	3202	3185	283.4	291.2	0	0	244.1
104	3.4	4.1	2890	3216	210.4	214.8	0	0	200
154	4.1	4.6	2564	3342	206.6	216.4	0	0	227.9
100	3.7	4.6	2533	2609	195.5	199.9	0	0	195.3
103	3.8	5.2	2589	2537	191	192.9	0	0	195.7
96	3	3.8	3074	3071	203.2	202.1	0	0	219.5
394	3.1	10.4	2716	2776	348.6	370.7	0	0	236.4
114	0	4.6	2716	2755	208.5	215.4	0	0	208.2
113	3.2	4.3	2301	2312	203.1	203.2	0	0	201.8
196	0	5.6	2715	2668	261.4	266.6	0	0	254.7
100	4	4.6	2347	2762	148.9	156.6	0	0	237.5
219	3.4	16.8	2012	2051	267.6	306.9	0	0	399
226	3.7	8.6	2176	1983	243.4	270.2	0	0	426.5
77	0	4.9	2645	2652	186.2	196.3	0	0	342.8
92	3.1	5.7	1596	1603	355.4	374	0	0	273.1
377	0	0	3429	3934	2346.6	2579.3	0	0	534.7
492	0	3.1	3854	3849	3023.7	3035.8	0	0	641
543	4	10.5	4136	4134	4601.2	4664.8	0	0	1018.6
392	4.3	8.3	4051	4034	4491.2	4492.4	0	0	1061.7
507	4.3	11.7	4117	4140	5774.8	5852.3	0	0	1179.9
408	3.9	8.5	4165	4133	4898.4	4909.8	0	0	1125.8
410	4.3	8.2	4058	4058	4862.6	4965.8	0	0	1086.1
441	4.8	8.9	3848	3800	4708.8	4902.9	0	0	1179.3
1087	4.6	25.5	3434	3529	4871.6	4853.7	0	0	1058.5
464	4.5	9.6	3220	3615	3409.3	3595.4	0	0	972.5
331	4.2	8	3310	3721	3671	3686.3	0	0	923
375	4.4	10	2777	3401	3338.5	3322.5	0	0	834.2
274	3.8	6.6	2945	3090	2215	2493.3	0	0	705.3
270	4	12.4	1913	1868	1033.5	1042.2	0	0	470.9
279	3.7	9.8	2100	2119	940.9	978.5	0	0	490.8
250	4	7	2515	2587	1731.8	1820.2	0	0	633.2
118	3.1	5.3	1648	1703	493.2	519.5	0	0	239.3

ZN Tot	NA Dis	NA Tot	Calc Hard	Calc Hard	K Dis	K Tot	Comment
249.4	934	929	155	155	532	548	
250.2	1017	882	143	145	533	507	
200.9	988	884	143	152	639	520	Special study
230.5	739	1048	136	157	445	658	Special study
198.8	739	765	135	139	475	490	Special study
198.1	764	744	134	136	482	467	Special study
218.7	926	933	143	144	585	586	Special study
255.4	823	802	123	124	636	621	Special Study
211.9	789	808	122	124	518	506	Special study
209.2	696	686	116	118	462	461	Special study
270.7	738	737	114	115	519	651	Special study
237.7	650	776	107	119	469	562	Special study
452.1	485	530	85	86	432	617	Special study
431.3	576	498	78	86	576	420	Special study
354.5	701	662	109	111	681	508	Special study
275.8	308	297	62	63	238	228	
576.6	941	1066	164	180	659	569	
703.1	1038	1030	167	168	606	612	
1091.3	1071	1063	171	172	723	742	Special study
1114.8	1077	1062	171	171	695	692	
1262.7	1027	1046	167	167	694	761	Special Study
1182.8	1127	1096	172	173	739	724	Special study
1148.4	1070	1051	167	169	707	676	Special study
1219.4	1028	1011	167	169	653	649	Special study
1203.8	881	930	146	147	710	932	Special study
1009.3	1014	884	139	149	790	610	Special study
1006.1	921	1049	144	153	610	827	
883.5	689	871	126	137	588	703	Special study
731.5	800	843	122	127	523	634	Special study
503.7	457	434	83	85	434	430	Special study
524.1	537	540	82	82	509	521	Special study
699.5	630	643	108	111	471	498	Special study
252.9	336	349	62	63	0	0	

Spring Data 2014

Howardsville				A68		
Date	Flows (cfs)	Dis Zn Conc. (ug/l)	Dis Zn Load (lbs/day)	Flows (cfs)	Dis Zn Conc. (ug/l)	Dis Zn Load (lbs/day)
2/7/2014		17	243			22
3/5/2014		16	244			21
3/21/2014		21	200			23
3/22/2014		18	228			22
3/25/2014		21	195			22
3/26/2014		21				
4/4/2014		27	196			28
4/5/2014		21	220			25
4/9/2014		33	236	40	1059	228
4/10/2014		45	208	58	973	304
4/10/2014		45	202	58	923	289
4/17/2014		54	255	61	834	274
4/18/2014		69	238	84	705	319
4/25/2014		139	399	180	471	457
4/26/2014		158	427	215	491	569
5/1/2014		67	343	86	633	294
7/1/2014		355	273	478	239	617
85th Percentile			325			1110

Howardsville				A68		
Date	Flows (cfs)	Dis Cd Conc. (ug/l)	Dis Cd Load (lbs/day)	Flows (cfs)	Dis Cd Conc. (ug/l)	Dis Cd Load (lbs/day)
2/7/2014		17	0.51			0.05
3/5/2014		16	0.51			0.04
3/21/2014		21	0.38			0.04
3/22/2014		18	0.47			0.05
3/25/2014		21	0.41			0.05
3/26/2014		21				
4/4/2014		27	0.44			0.06
4/5/2014		21	0.36			0.04
4/9/2014		33	0.49	40	3.91	0.84
4/10/2014		45	0.47	58	3.64	1.14
4/10/2014		45	0.41	58	3.44	1.08
4/17/2014		54	0.63	61	3.25	1.07
4/18/2014		69	0.59	84	2.57	1.16
4/25/2014		139	1.15	180	1.65	1.60
4/26/2014		158	1.15	215	1.64	1.90
5/1/2014		67	0.78	86	2.12	0.98
7/1/2014		355	0.86	478	0.9	2.32

85th Percentile

0.84

4.38

Howardsville				A68			
Date	Flows (cfs)	Dis Mn Conc. (ug/l)	Dis Mn Load (lbs/day)	Flows (cfs)	Dis Mn Conc. (ug/l)	Dis Mn Load (lbs/day)	
2/7/2014		17	253			2347	
3/5/2014		16	283			3024	
3/21/2014		21	210			4601	
3/22/2014		18	207			4491	
3/25/2014		21	196			5775	
3/26/2014		21				4898	
4/4/2014		27	191			4863	
4/5/2014		21	203			4709	
4/9/2014		33	349		40	4872	1051
4/10/2014		45	209		58	3409	1066
4/10/2014		45	203		58	3671	1148
4/17/2014		54	261		61	3339	1098
4/18/2014		69	149		84	2215	1003
4/25/2014		139	268		180	1034	1003
4/26/2014		158	243		215	941	1091
5/1/2014		67	186		86	1732	803
7/1/2014		355	355		478	493	1271
85th Percentile			279			4868	

Howardsville			A68	
Date	Flows (cfs)	Hardness (ug/l)	Flows (cfs)	Hardness (ug/l)
2/7/2014		152		184
3/5/2014		164		90
3/21/2014		156		188
3/22/2014		158		188
3/25/2014		154		194
3/26/2014		156		190
4/4/2014		152		176
4/5/2014		140		200
4/9/2014		128		148
4/10/2014		132		136
4/10/2014		134		156
4/17/2014		124		148
4/18/2014		122		138
4/25/2014		94		98
4/26/2014		88		92
5/1/2014		120		132
7/1/2014		66		70
Ave. Hardness:		132		149

Percent Load
(Howard load/
A68 load)

18%
17%
17%
27%
28%
65%
64%
42%
85%

Percent Load
(Howard load/
A68 load)

10%
10%
9%
17%
19%
54%
52%
29%
71%

Percent Load
(Howard load/
A68 load)

6%
5%
4%
7%
6%
20%
19%
8%
54%

Percent Load
(Howard load/
A68 load)

Sample Number	Event#	Stn#	Org Name Kit#	Date	Time	Rep	Flow
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Howardsville

467201402070945	467.001	467 DOW	0	2/7/2014	9:45:00	1
467201403050930	467.002	467 DOW	0	3/5/2014	9:30:00	1
467201403211630	467.003	467 DOW	0	3/21/2014	16:30:00	1
467201403220930	467.004	467 DOW	0	3/22/2014	9:30:00	1
467201403251645	467.005	467 DOW	0	3/25/2014	16:45:00	1
467201403260815	467.006	467 DOW	0	3/26/2014	8:15:00	1
467201404041800	467.007	467 DOW	0	4/4/2014	18:00:00	1
467201404050900	467.008	467 DOW	0	4/5/2014	9:00:00	1
467201404091800	467.009	467 DOW	0	4/9/2014	18:00:00	1
467201404100715	467.01	467 DOW	0	4/10/2014	7:15:00	1
467201404100900	467.011	467 DOW	0	4/10/2014	9:00:00	1
467201404171830	467.012	467 DOW	0	4/17/2014	18:30:00	1
467201404180700	467.013	467 DOW	0	4/18/2014	7:00:00	1
467201404251815	467.014	467 DOW	0	4/25/2014	18:15:00	1
467201404260630	467.015	467 DOW	0	4/26/2014	6:30:00	1
467201405010945	467.016	467 DOW	0	5/1/2014	9:45:00	1
467201406061240	467.017	467 DOW	0	6/6/2014	12:40:00	1
467201407011310	467.018	467 DOW	0	7/1/2014	13:10:00	1

A68

103201402071030	103.3	103 DOW	0	2/7/2014	10:30:00	1
103201403051015	103.301	103 DOW	0	3/5/2014	10:15:00	1
103201403211715	103.302	103 DOW	0	3/21/2014	17:15:00	1
103201403221015	103.303	103 DOW	0	3/22/2014	10:15:00	1
103201403251745	103.304	103 DOW	0	3/25/2014	17:45:00	1
103201403260900	103.305	103 DOW	0	3/26/2014	9:00:00	1
103201404041845	103.306	103 DOW	0	4/4/2014	18:45:00	1
103201404051000	103.307	103 DOW	0	4/5/2014	10:00:00	1
103201404091845	103.308	103 DOW	0	4/9/2014	18:45:00	1
103201404100800	103.309	103 DOW	0	4/10/2014	8:00:00	1
103201404100930	103.31	103 DOW	0	4/10/2014	9:30:00	1
103201404171915	103.311	103 DOW	0	4/17/2014	19:15:00	1
103201404180745	103.312	103 DOW	0	4/18/2014	7:45:00	1
103201404251845	103.313	103 DOW	0	4/25/2014	18:45:00	1
103201404260715	103.314	103 DOW	0	4/26/2014	7:15:00	1
103201405011015	103.315	103 DOW	0	5/1/2014	10:15:00	1
103201406061320	103.316	103 DOW	0	6/6/2014	13:20:00	1
103201407011245	103.317	103 DOW	0	7/1/2014	12:45:00	1

PH	°C	Phen Alk	Tot Alk	Tot Hard	DO	DO Sat	Comment
6.29	1	0	34	152			
6.23	0	0	34	164			
7.66	6.5	0	32	156			Special study
7.7	2	0	34	158			Special study
7.63	8.5	0	32	154			Special study
7.59	1.5	0	34	156			Special study
7.66	5	0	34	152			Special study
7.69	1.75	0	34	140			Special study
7.64	6	0	34	128			Special Study
7.59	1	0	36	132			Special study
7.69	1	0	34	134			Special study
7.58	9.5	0	30	124			Special study
7.67	1	0	32	122			Special study
7.68	6	0	28	94			Special study
7.69	2	0	26	88			Special study
7.63	3	0	30	120			Special study
7.52	9	0	18	48			
8.09	11.5	0	22	66			
6.18	0.5	0	34	184			
6.13	0.5	0	34	90			
7.44	4.5	0	28	188			Special study
7.5	1	0	30	188			
7.46	6	0	28	194			Special Study
7.54	1	0	28	190			Special study
7.42	3.5	0	30	176			Special study
7.41	1.75	0	30	200			Special study
7.47	5	0	26	148			Special study
7.68	0.5	0	28	136			Special study
7.53	1	0	30	156			
7.38	7	0	26	148			Special study
7.38	1	0	32	138			Special study
7.55	6	0	28	98			Special study
7.56	2	0	26	92			Special study
7.53	2.5	0	28	132			Special study
7.52	9	0	20	54			
8.12	10.5	0	22	70			